SOUTHEAST ALASKA SAC ROE HERRING FISHERY

1990 MANAGEMENT PLAN

Prepared by

Southeast Alaska Region Staff

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INTRODUCTION

The Southeast Alaska commercial herring fisheries occur during the winter when the product is used for bait and during the spring when the product is harvested for its roe. The roe harvest includes the traditional sac roe fishery and, for the first time in 1990, a roe-on-kelp pound fishery. This management plan provides an overview of the 1990 sac roe herring fishery for Southeast Alaska. The expected harvest levels and management strategy are discussed. A separate management plan for the roe-on-kelp pound fishery is available at local Department offices.

The 1989 Southeast Alaska roe herring fishery harvested approximately 13,840 tons of herring, the highest ever reported. A harvest of approximately 4,453 tons is anticipated for the 1990 season.

Southeast Alaska roe herring are commercially harvested by purse seine and set gill net gear types, both of which are included in the limited entry system. During 1989 approximately (119) set gill net and (52) purse seine permits were issued. Similar numbers are expected for the 1990 season. There are currently four roe herring fishing areas in Southeast Alaska consisting of two exclusive purse seine and two exclusive gill net areas (Figure 1). Each of these fisheries will be discussed separately.

GENERAL MANAGEMENT OVERVIEW

Commercial herring fishing regulations are listed in the current Commercial Herring Regulations Booklet. Copies may be obtained at any Fish and Game Office. Staff members listed at the conclusion of this plan are available to provide further details.

Vessel Check In And Check Out Procedure

The Department requests that tenders and fishing vessels check in and out of the fishing areas, with personnel located on the fishing grounds, to facilitate timely assessment of herring landings. Operators who would transport fish out of Alaska prior to processing must submit a fish ticket before departing the State.

Reporting Procedures for Floating Fish Processors

Operators of floating fish processing vessels will be required to report in person, or by radio or telephone, to the local representative of the Department located within the management area of intended operation before the start of processing operations. The report must include the location and date of intended operation. These requirements are specified by regulation (5AAC 39.130(f)).

Announcement of Openings and Closures

Openings and closures of fishing areas will be made by Emergency Order. Announcements will be made on the fishing grounds over VHF radio and by contacting fishermen individually when possible. The VHF radio frequency for receiving these announcements will be indicated on the fishing grounds. Fishermen are advised that short notification of opening and closing times should be expected. This is necessary to ensure fishing opportunities prior to major spawning and to maintain the harvest at desired levels.

The Department will attempt to monitor the stocks in advance of the expected fishery opening dates. If spawning threshold levels are determined to be met, the fisheries will be placed on a two hour notice prior to the first opening. The Department will try to give the industry 36 hour advance warning of a decision to place a fishery on a two hour notice. However, if spawning is either earlier or heavier than anticipated and waiting 36 hours could result in loss of fishing opportunity, this much advance notice will not be given.

Management Strategy

The management strategy for Southeast Alaska herring fisheries considers the availability of mature herring which have quality roe. Good quality herring is generally considered to contain approximately 10% or more mature roe. Fishing is not allowed unless a minimum threshold level of mature herring is available for spawning. The "threshold level" is the herring biomass needed to meet minimum spawning requirements. The established threshold levels for the herring sac roe fishing areas are as follows:

1.	Seymour Canal	6 million pounds (3,000 tons)
2.	Kah Shakes	10 million pounds (5,000 tons)
3.	Lynn Canal	10 million pounds (5,000 tons)
4.	Sitka Sound	15 million pounds (7,500 tons)

The management strategy also considers total stock biomass, age, growth characteristics and past spawning success. Biomass estimates are derived from hydroacoustic and spawning ground aerial and dive surveys. Age and growth information is obtained by sampling the commercial catch, test fishing, beach seining, and from trawling conducted in conjunction with hydroacoustic surveys.

The allowable harvest is based on a graduated scale that allows for higher harvest rates as a herring population increases relative to its threshold spawning level. This approach is consistent with the policies of the Alaska Board of Fisheries for maintaining annual harvest rates between 10-20% of the mature herring in excess of established threshold spawning levels. When the spawning stock is at its minimum threshold level, a 10% harvest is allowed. The allowable harvest increases an additional 2% for every spawning stock biomass increase of an amount equal to the threshold level. It reaches a maximum of 20% when the population is 6 times the threshold level.

The percent harvest rate for any multiple of the threshold level from 1 to 6 can be estimated from Figure 2 or by performing the following mathematical calculation:

$$\text{Percent Harvest Rate} = 8 + \left[(2) \times \frac{\text{Spawning Population Size}}{\text{Threshold Level}}\right]$$

The spawning population size and threshold levels are expressed in millions of pounds. The spawning biomass is determined from either spawn deposition sampling conducted during the previous season or current year hydroacoustic surveys. When only spawning ground surveys can be utilized, the estimates include only mature herring that spawned the previous season. These estimates do not account for any mortality of the herring since the spawning occurred nor do they include additional recruitment since the surveys were completed. For fisheries where the population estimate is derived acoustically, only those herring that would be expected to contribute to the spawn are included. Such is determined by sampling the population for size composition. Current management uses the spawning ground survey as the primary population estimator for the management of the sac roe herring fisheries.

Southeast Alaska herring generally reach maturity when they obtain a standard length of 185 mm (as measured from the tip of the snout to the hypural plate, the bony plate where the tail fin rays are attached), a size achieved by some 3, and most 4-year-old fish. A herring this size is approximately 8 inches total length. All herring estimated to be less than 185 mm are not included in the calculation of threshold harvest levels or harvest rates as the 185 mm size is designed to base harvests on mature, larger herring.

Roe Quality

One management objective is to conduct the fishery at a time when the roe percentage is high to maximize its value to the industry. To determine the best time to fish the Department samples prespawning herring populations in cooperation with fishermen and trained industry technicians. All such test fishing activities must be authorized by Department biologists on the fishing grounds.

GILL NET FISHERIES

The two set gill net sac roe fishing areas in Southeast Alaska are Kah Shakes in regulatory Section 1-F, and Seymour Canal in Section 11-D; however, no fishing will be permitted at Kah Shakes in 1990. A summary of important information for each fishery is shown in Table 1. Fishermen are reminded that regulations require identification tags, issued by the Department, to be placed on one buoy at each end of a herring set gill net.

Kah Shakes

Set gill net sac roe fisheries have occurred in the Kah Shakes area since 1976. Annual landings have ranged from 171 tons (1978) to 3,250 tons (1983).

The estimated size of the Kah Shakes herring population is based upon spawn deposition surveys accomplished by Department herring research personnel. This has proven to be the only practical assessment method for the Kah Shakes herring stock and has been used since 1978 to establish harvest levels. The surveys indicated that approximately 6.6 million pounds of herring spawned in the Kah Shakes area in 1989. This is below the minimum spawning threshold of 10 million pounds, hence no commercial harvest will be allowed in 1990. The Department will, however, monitor the spawning stock and conduct dive surveys to estimate the stock size. The calculated population estimate will then be used to set the harvest level for the 1991 season.

Seymour Canal

Herring roe fisheries have occurred in Seymour Canal (Section 11-D) from April 26 (1984 and 1988) to May 10 (1986). Set gill net gear replaced seine gear in 1980. Harvests have ranged from 302 tons in 1987 to 618 tons in 1981.

Spawning ground egg deposition surveys conducted during the spring of 1989 indicated a mature herring spawning stock of approximately 6.24 million pounds. An estimated population level of this size allows for a harvest rate of 10.08% and represents a guideline harvest level of 312 tons.

Department biologists will monitor the Seymour Canal fishing area beginning in mid to late April. They will remain through the fishing season.

The required set gill net buoy stickers may only be obtained on the fishing grounds. Fishermen are encouraged to obtain them as soon as possible after arriving on the fishing grounds. The stickers will be issued to valid permit holders only and identification will be required.

PURSE SEINE FISHERIES

There are two purse seine herring areas in Southeast Alaska, Lynn Canal and Sitka Sound. Commercial fishing will be allowed only in Sitka Sound during the 1990 season. A summary of important information for each fishery is shown in Table 2.

Lynn Canal

The Lynn Canal herring roe area encompasses regulatory Sections 15-B, 15-C and that portion of Section 11-A north of Shrine Island.

The Lynn Canal fishery has not been open since 1982. Aerial and vessel surveys conducted in the Lynn Canal fishing area during the spring of 1989 indicated the population is still depressed and well below the spawning threshold level. Thus the fishery will not open in 1990. The reasons for the continued low stock level are not known.

Sitka Sound

Except for the waters of Whale and Necker Bays, the Sitka Sound sac roe fishing area encompasses the waters of Section 13-B north of the latitude of Aspid Cape.

In the spring of 1989, approximately 65.5 miles of beach were recorded as having received herring spawn in the Sitka Sound fishing area. Subsequent spawn deposition surveys provided an estimated spawning population of approximately 54.37 million pounds. The harvest strategy discussed earlier provides for a 1990 harvest rate of 15.25% of the estimated mature herring stock and a harvest of 4,146 tons.

During the period that a fishery might be expected (March 24 to April 16), herring distribution levels will be monitored throughout the Sitka area. The areas open to fishing will depend on the distribution of herring stocks and the need to provide for a fishery that will harvest good quality herring. The Department anticipates that six-year-old herring will dominate the population.

The following Commercial Fisheries personnel may be contacted regarding this management plan:

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William Bergmann Area Management Biologist	Box 667 Petersburg, Alaska 99833 (907) 772-3801
Randy Timothy Assistant Area Biologist	Box 200 Wrangell, Alaska 99929 (907) 874-3822
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Table 1. Southeast Alaska gill net herring sac roe fisheries information summary, 1976-1989.

	Seymour Canal[1]				Kah Shakes			
Year	Guideline Harvest Level (Tons)	Catch (Tons)	Date Two Hour Notice Was Effective	Opening Dates	Guideline Harvest Level (Tons)	Catch (Tons)	Date Two Hour Notice Was Effective	Opening Dates
1976	200	195		May 9	300	426	March 23	April 2
1977	500	485	May 4	May 9	800	820	March 29	April 1
1978	500	729	May 2	May 8	680	171	March 26	April 4
1979	250	269	May 3	May 3	585	528	March 28	March 29
1980	Fishery Not Open				1100	1140	March 25	March 25
1981	600	615	April 28	April 28	1550	1840	March 20	March 20
1982	Fishery Not Open				1700	2279	March 20	March 26
1983	Fishery Not Open				2500	3250	March 23	March 24
1984	375	518	April 20	April 26	2100	2182	March 20	March 29
1985	Fishery Not Open				2300	2161	March 28	March 29
1986	300	339	May 5	May 10	1100	1536	March 29	March 31
1987	419	302	May 1	May 5, 6	1200	1440	March 24	March 26, 27
1988	530	586	April 20	April 26-May 1	953	1087	March 24	March 25
1989	332	547	April 21	April 28	647	592	March 20	March 20, 21

[1] Seymour Canal was purse seine fishing area prior to 1980.

Table 2. Southeast Alaska purse seine herring sac roe fisheries information summary, 1976-1989.

	Juneau[1]-Lynn Canal				Sitka Sound			
Year	Guideline Harvest Level (Tons)	Catch (Tons)	Date Two Hour Notice Was Effective	Opening Dates	Guideline Harvest Level (Tons)	Catch (Tons)	Date Two Hour Notice Was Effective	Opening Dates
1976	750	432 Seine 124 Gillnet		April 26 April 29	780	800	April 10	April 16
1977	875	709 Seine 217 Gillnet		April 19 April 20	Fishery Not Open			
1978	500 200	602 Seine 346 Gillnet	April 19	April 20 April 21	250	175	April 4	April 5
1979	Fishery Not Open				2000	2250	April 7	April 12
1980	600	975	April 13	April 26	4000	4385	April 4	April 4 & 5
1981	725	761	April 17	April 23	2700	3506	March 23	March 24 & 26
1982	375	551	April 30	April 30	3000	4363	March 26	March 30
1983	Fishery Not Open				5500	5463	March 23	March 26 & 29
1984	Fishery Not Open				5000	5711	March 22	March 26, 27 & 28
1985	Fishery Not Open				7700	7475	March 24	March 29 and April 1 & 5
1986	Fishery Not Open				5029	5443	March 28	April 2 & 8
1987	Fishery Not Open				3600	4216	March 23	March 31
1988	Fishery Not Open				9200	9573	March 25	April 4 - 14
1989	Fishery Not Open				11,700	11,831	March 23	March 31 - April 8

[1] The Juneau fishery was both a gillnet and seine area prior to 1980.

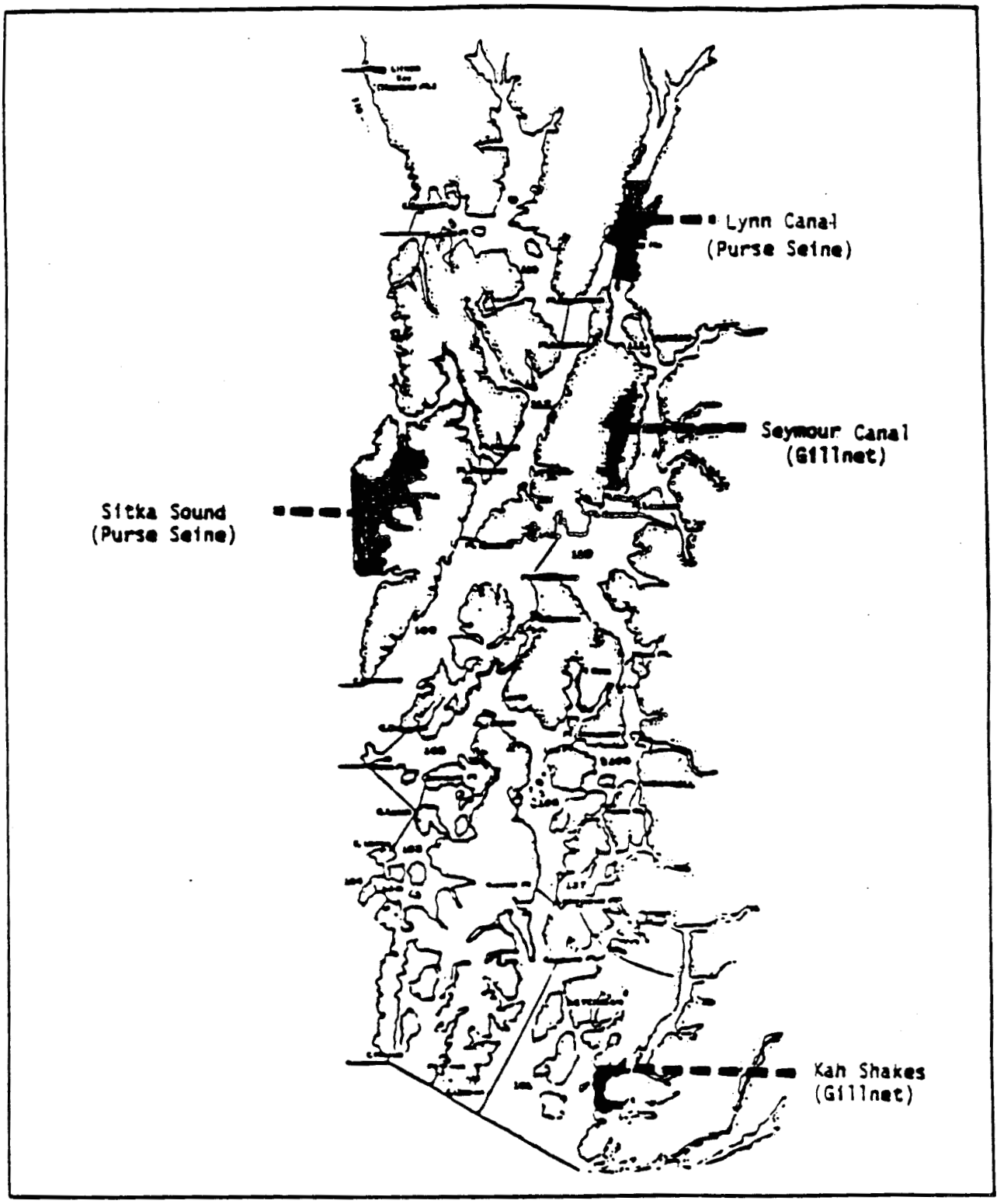

Figure 1. Southeast Alaska sac roe herring areas.

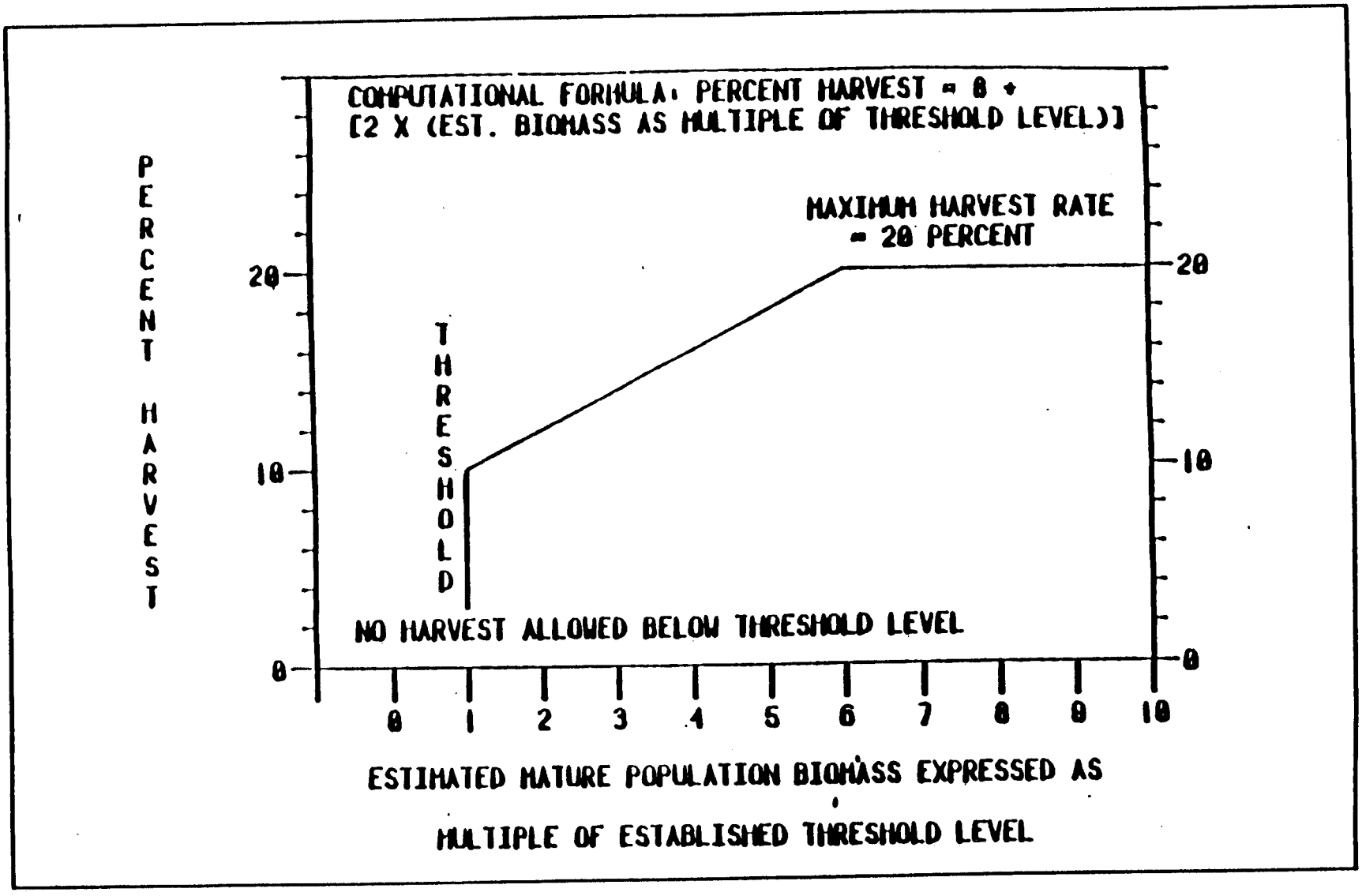

Figure 2. Generalized harvest strategy for Southeast Alaska herring stocks showing allowable percent annual harvest related to estimated biomass of mature stock expressed as a multiple of the established harvest threshold level.